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# The first record of *Dimargaris bacillispora* (*Dimargaritales*) in South America

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**Abstract** – *Dimargaris bacillispora* was reported for the first time in South America from tapir (*Tapirus terrestris*) dung collected at the Reserva Ecológica de Dois Irmãos (8°7'30" S and 34°52'30" W), located in Recife, State of Pernambuco, Northeast Brazil.

**Key Words** – *Zygomycetes*, *Dimargaritaceae*, herbivore, taxonomy

## Introduction

The first report of *Dimargaris* was provided by Tieghem (1875), who introduced the genus and described *Dimargaris cristalligena* from rat dung in Paris, France. Subsequently, valuable contributions were provided by Benjamin (1959, 1965), Mehrotra & Baijal (1963, 1964), Boedijn (1959), Mikawa (1976), Mirza et al. (1979), Kirk & Kirk (1984) and Wrzosek & Gajowniczek (1998). Currently, *D. arida*, *D. bacillispora*, *D. cristalligena*, *D. oblongispora*, *D. simplex*, *D. verticillata* and *D. xerosporica* are recognized in the genus (Benny 2005).

*Dimargaris bacillispora* was first described by Benjamin (1959) from mouse dung in California (USA). Since then only a few records of this species have been published. *Dimargaris bacillispora* is a parasite of *Mortierellales* and *Mucorales* (Benny 2005), as the other species of the genus.

The aim of this report is the description of *D. bacillispora* from tapir dung in Brazil.

## Materials and methods

Samples of tapir (*Tapirus terrestris* L.) dung were collected at the Reserva Ecológica de Dois Irmãos (8°7'30"S and 34°52'30"W), which includes a

Zoological Park, located in Recife, State of Pernambuco, Northeast of Brazil. The area is 387 ha and comprises an Atlantic Forest Ecological Reserve. The samples were collected with a sterilized spatula, placed in plastic bags, taken to the laboratory and incubated in a moist chamber at 28°C ± 2°C for 7 days under alternating light and dark periods. The specimen was studied directly from the substrata under a stereomicroscope and a light microscope and described according to Benjamin (1959). A slide is deposited in the Pe. Camille Torrend (URM) Herbarium of the Universidade Federal de Pernambuco, Recife, Brazil.

## Taxonomy

***Dimargaris bacillispora*** R.K. Benj., Aliso 4: 376 (1959) FIG. 1 A–D

MATERIAL EXAMINED: Brazil, Pernambuco, Recife, Reserva Ecológica de Dois Irmãos, May/06, A. L. C. M. A. Santiago (URM 80036/46015).

SPOROPHORES erect, colorless, 1–3 mm long, with simple branches, that become irregularly verticillate, bearing fertile heads terminally. SEPTUM with a lenticular cavity. FERTILE BRANCHES 50–400 × 6·5–12 µm, formed below each of the distal septa of the main stalks and producing one or two secondary branches. DISTAL CELLS of the main stalks about 100–200 µm long. BASAL CELLS of the main stalks 7·5–13 µm wide. FERTILE HEADS 30–60 µm diam, composed of four divergent sporiferous branchlets bearing cells formed successively by budding. BASAL CELLS 10–18 × 7·5–10 µm; cells of the primary branches producing 1–3 divergent cells which may form new cells that produce merosporangia or give rise to merosporangia. All cells of sporiferous heads, except a few of the proximal cells of the primary and secondary branches, disarticulating at maturity and the spores, immersed in drops of liquid which form glistening white spheres about 22–45 µm diam. MEROSPORANGIA cylindrical, simultaneously forming two bacilliform slightly curved MEROSPORES, 5–6(–7·5) × 1·5–2·5 µm, with a globule at each end. ZYGOSPORES not observed.

HABITAT: Parasitizing *Mucor* sp. growing on tapir dung.

DISTRIBUTION: Brazil, Mexico, Pakistan, USA (California, Florida, Arizona).

NOTES: The characteristics of this strain of *D. bacillispora* showed a close similarity with the description of Benjamin (1959), except for the merospores, which have a globule at each end. However, we do not consider this difference enough to characterize a new variety.

Mehrotra & Baijal (1963) reported an isolate of *Dimargaris* from cow dung in Allahabad, India and named it *D. oblongispora*. According to these authors, this species is closely related to *D. bacillispora* and differs in producing oblong merospores and sporangiophores with septate branches. However, according to Kirk & Kirk (1984), this isolate from India does not appear, from the published description and illustrations, to be significantly different from *D. bacillispora*,

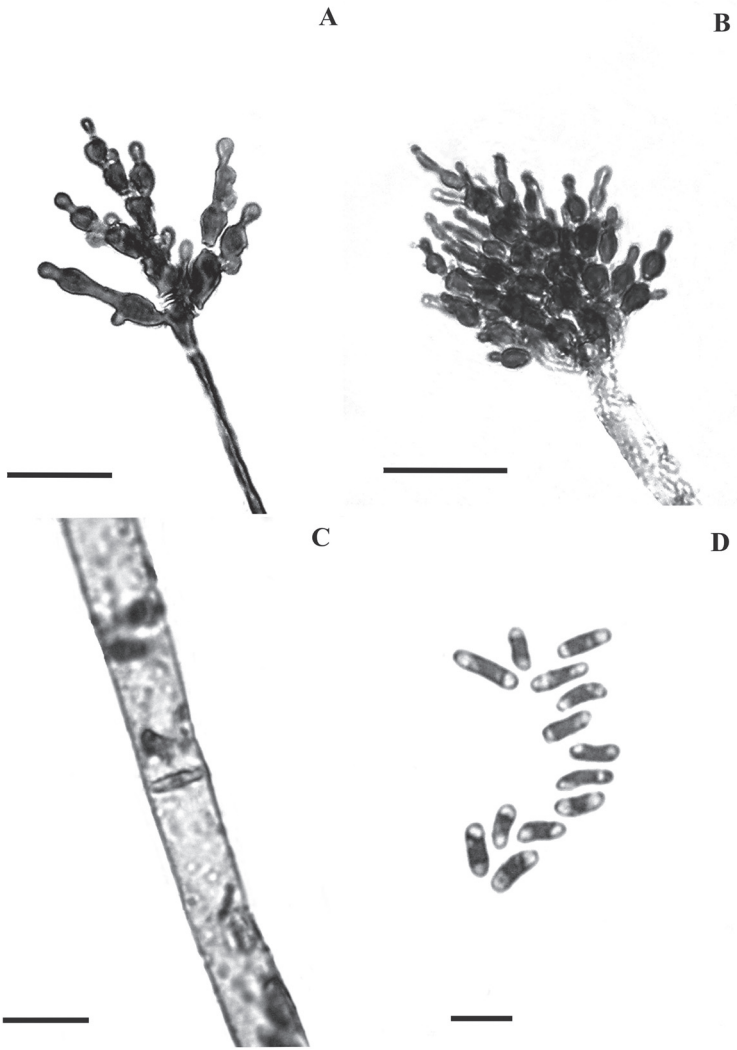


Fig 1. *Dimargaris bacillispora*
A, B. Sporophores and fertile heads in different stages of development;
C. Septum with a lenticular cavity; D. Sporangiospores.
Scale bars: A–B = 25μm; C = 10μm; D = 5μm.

and these two species should probably be placed in synonymy. Nevertheless, these two species were listed by Benny (2005) and in Species Fungorum (www.speciesfungorum.org) as being distinct.

This report describes the first occurrence of *Dimargaris* in South America, contributing to the knowledge of the geographical distribution of *Dimargaritales*. Only one taxon from this order has been reported previously in Brazil, *Dispira cornuta* isolated from herbivore dung (Viritato & Trufem 1985).

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